

Notice of Allowability

Application No.

10/029,735

Examiner

J. Bret Dennison

Applicant(s)

SAINI ET AL.

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 9/6/2006.
2. ☒ The allowed claim(s) is/are 1,6,9,26,28,29,31,33,34 and 38.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

EXAMINER'S AMENDMENT

An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, and amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ash Tankha (Reg. No. 33,802) on 17 November 2006.

IN THE CLAIMS

Claim 1 (currently amended). A system for users to develop distributed applications over a network of computing units, the system comprising:

- a. a plurality of component programs installed over the network of computing units to create the distributed application, wherein the only functionality of the component programs are is to receive data presented at their its input ports, process said data and write the results to their its output ports, and wherein the component programs do ~~does~~ not contain routing information and information related to other component programs;
- b. a plurality of data stores on one or more of the computing units that contain a specification of component programs that make up the application, the communication routes between the component programs, and the nodes on which the component programs are to run;

- c. a graphical user interface based application composer that composes said distributed application within said one or more data stores by allowing users to graphically specify the component programs that make up the application, the communication routes between the component programs, and the nodes on which the component programs are to run; and,
- d. a multiplicity of controller programs running on a multiplicity of computing units in the network for transmitting data to said input ports of the component programs and receiving data from said output ports of the component programs and for transmitting and receiving data with controller programs and disseminating said routing information to other controller programs, and wherein controller programs pass data between ~~from one component program to another component program~~ component programs based on the routing information disseminated to them from the data stores in which the distributed application has been composed.

Claim 2-5 (canceled)

Claim 6 (previously presented). The system as recited in claim 1 wherein the component programs are adaptors for indirectly communicating with external applications through controller programs, wherein external applications are applications that are not installed within ~~the system~~ said network of computing devices.

Claim 7-8 (cancelled)

Claim 9 (currently amended). The system as recited in claim 1, wherein the data stores can be replicated for high availability on a multiplicity of computing units.

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Claim 10-25 (cancelled)

Claim 26 (currently amended). A method for developing distributed applications over a network of computing units, with multiple controller programs running on multiple computing units, the method comprising steps of:

- a. customizing component programs;
- b. registering the component programs;
- c. composing said distributed application externally in a data stores wherein said distributed application is composed by using a graphical user interface based application composer that composes said distributed application within said one or more data stores by allowing users to graphically specify the component programs that make up the application, the communication routes between the component programs, and the nodes on which the component programs are to run;
- d. running multiple controller programs on multiple computing units in the network for transmitting data to input ports of the component programs and receiving data from output ports of the component programs and for transmitting and receiving data with controller programs and disseminating said routing information to other controller programs.
- e. receiving said transmitted data at the input ports of the a-component programs, processing said data within said component programs and writing the results to the output ports of the component programs; and
- f. optionally checking the connectivity and resources on multiple controller programs running on multiple computing units.
- g. executing the distributed application.

Claim 27 (canceled).

Claim 28 (previously presented). The method as claimed in claim 26, wherein the registering comprises the steps of:

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- a. installing component programs on the computing units;
- b. specifying the external resources required by the component programs;
- c. specifying the input and output channels of the component programs; and
- d. making the component programs accessible to said computing units.

Claim 29 (currently amended). The method as claimed in claim 26, wherein composing the distributed application comprises the steps of:

- a. choosing a subset of component programs from a set of component programs;
- b. adding and specifying the routes between the component programs;
- c. specifying the computing units on which the component programs is are to be run;
- d. defining run time attributes of the component programs;
- e. defining various attributes of the routes; and
- f. storing the composed distributed application in ~~a~~ data stores.

Claim 30 (canceled).

Claim 31 (original). The method as claimed in claim 29 wherein the defining attributes of the routes comprises defining the route type as peer-to-peer.

Claim 32 (canceled).

Claim 33 (original). The method as claimed in claim 26, wherein the checking the connectivity and resources comprises steps of:

- a. checking if all controller programs are already running on the computing units in the network;
- b. checking if all the component programs are installed on the computing units on which they are specified to launch; and

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- c. installing the component programs on the computing units in case they are not already installed.

Claim 34 (currently amended). The method as claimed in claim 26, wherein executing the distributed application, comprises the steps of:

- a. receiving of data for the component programs by controller programs;
- b. collection of data by the appropriate component program from the controller programs;
- c. processing of data by the component programs;
- d. receiving of processed data from the component programs by the controller programs; and
- e. transmitting the data to ~~the next component program~~ or a plurality of next controller programs based on the routing information stored in the routing table by the controller program interacting with it.

Claims 35-37 (canceled)

Claim 38 (currently amended). The method as recited in claim 34, wherein the passing of the processed data to the plurality of next component programs based on the routing information stored in the routing table by the controller program comprises steps of:

- a. tagging the processed data with the name of the destination component programs;
- b. placing the data processed by the controller program in the message bus for the controller program on whose node the destination component is installed for fetching, where the routing table specifies a hub/spoke route type; and
- c. sending the data processed by the controller program directly to the controller program on whose computing unit the destination component programs is are installed, where the routing table specifies a peer to peer route type.

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Claims 39 - 48. (canceled)

Allowable Subject Matter

Claims 1, 6, 9, 26, 28, 29, 31, 33, 34, and 38 are allowed in view of the Applicant's arguments (see Applicant's Response, filed 9/6/2006) and the cited prior art of record. The independent claims recite a system and method for static based central routing for distributed applications in which each computing node contains a component program and a controller program, the only functionality of the component program is to receive data at its input port, process the data, then write the results to the output ports, and the functionality of the control program is to handle the routing of the data to input ports of the component programs, and disseminating said routing information to other controller programs and wherein the controller programs pass data between each other based on the routing information disseminated to them from the data stores, in which a GUI allows users to graphically specify the component programs that make up the application, the communication routes between the component programs, and the nodes on which the component programs run which, in addition to the rest of the claim limitations, are distinguished from the prior art. For support, see Instant Specification (p9, lines 10-35, p13, line 10 through p17, line 7).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Bret Dennison whose telephone number is 571-272-3910. The examiner can normally be reached on Monday-Thursday 9am-5:30pm Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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